

Examples of Soil Cement Mixing for Stabilization of Coal Tar/Coal Tar Constituents

Site Name	Location / Regulatory Agency	Contaminants	Description	Reference
Former MGP Site	Columbus, GA / Georgia Department of Natural Resources	PAH's, TPH, VOC's	In-situ treatment was accomplished by mixing/drilling a Type I portland cement slurry with the soil to an approximate depth of 35 feet using an 8-foot-diameter auger.	USEPA Office of Solid Waste and Emergency Response. 1999. A Resource for MGP Site Characterization and Remediation, May (EPA 542-R-99-005)
Augusta Manufactured Gas Plant	Augusta, GA	Coal Tar	A soil mixing auger was used to inject and mix portland cement into the soil. The 10-foot-diameter auger was run down through the soil. The auger had a hollow stem with auger flights equipped with nozzles. Cement-based grout was injected into the soil. The depth of auger mixing continued through the shallow groundwater saturated zone and into a few feet of the soft fractured rock zone beneath. Within the treated area, tar-like source material in the impacted soil was solidified in place.	Portland Cement Association Website http://www.cement.org/waste/wt_apps_brown_augusta.asp
Wisconsin Fuel & Light - Former MGP Site	Manitowoc, WI	Coal Tar	Soils were stabilized using a reagent mixture of activated carbon, cement, fly ash, and organophilic clays. The in-situ treatment of impacted soil was accomplished by simultaneous injection and mixing of cement-based grout using 4- and 7-foot-diameter tools.	USEPA Office of Solid Waste and Emergency Response. 1999. A Resource for MGP Site Characterization and Remediation, May (EPA 542-R-99-005)
Appleton MGP Site	Appleton, WI / Wisconsin Department of Natural Resources	Coal Tar	Cement and other reagents were mixed into coal tar-impacted soil while the soil remained in-place. This <i>in-situ</i> mixing was accomplished using large	Portland Cement Association Website http://www.cement.org/waste/ec/wt_ec_05feb.htm

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			(12- and 8-foot) diameter reagent-injection soil-mixing augers as well as backhoes.	
Cambridge Research Park - Former MGP Site	Cambridge, MA / Massachusetts Department of Environmental Protection	Coal Tar	Soil cement mixing technique was used for the in-situ stabilization of approximately 103,500 cubic yards of non-aqueous phase liquid (NAPL) impacted soils at the Site where contaminants exceed the Upper Concentration Limit (UCL) established by the Massachusetts Contingency Plan (310 CMR 40.0996).	Geo-Con Website www.geocon.net/pdf/paper51.pdf
US Steel Facility	Duluth, MN / Minnesota Pollution Control Agency	Coal Tar & Slag	Approximately 10,000 cubic yards of coal tar and tar contaminated soil were solidified in-place using in-situ cement	MPCA Wesbite http://www.pca.state.mn.us/cleanup/sites/uss-actionssummary01.pdf
Former Wood Treatment Site	Port Newark, New Jersey	Creosote & Arsenic	Wood preserving activities involving creosote impacted a 2-acre area at the site. Within this area, approximately 24,000 cubic yards of soil was impacted with creosote from a depth 2 to 12 feet below grade. In-situ cement soil mixing of the soils was carried out by mixing cement into the soil using an in-situ blender.	Portland Cement Association Wesbite http://www.cement.org/waste/wt_apps_brown_port.asp